

Att'y Ref. No. 003-066

U.S. App. No.: 10/625,468

IN THE CLAIMS:

Kindly rewrite Claims 1-18 as follows:

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1. (Currently Amended) A method for detecting partial conductor short circuits ~~in~~ between a first end and a second end of a first conductor, the first conductor including plural mutually insulated partial conductors which extend between said first and second ends and which are short-circuited at said first end, said second end, or both, the method comprising:

~~connecting together the partial conductors by a short circuit at one or both ends of the conductor;~~

arranging an auxiliary conductor in parallel with said first conductor at a distance, thereby creating a first combined conductor;

feeding a time-varying electrical signal into an end of said first combined conductor;

measuring the propagation behavior of said time-varying electrical signals ~~signal~~ on the said first combined conductor;

comparing the measured propagation behavior with ~~the a~~ known propagation behavior of a second combined conductor comprising a second conductor as a reference conductor, said second conductor being similar to said first conductor but without partial conductor short circuits; and

determining the presence of partial conductor short circuits within said first conductor from the changes in propagation behavior from said comparing.

2. (Previously Presented) A method according to claim 1, wherein measuring the propagation behavior comprises measuring a complex reflection behavior.

3. (Currently Amended) A method according to claim 2, wherein measuring comprises measuring the propagation behavior of periodic signals of a predetermined frequency, and wherein the frequency is varied in a predetermined frequency range for measuring the reflection behavior; and

comparing comprises receiving and comparing electrical parameters of the signals returning from the first conductor.

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4. (Previously Presented) A method according to claim 3, wherein the frequency is varied in the range of a few kHz to a few 100 MHz.
5. (Currently Amended) A method according to claim 2, wherein the time-varying signals comprise periodic or non-periodic signals of a predetermined signal form, and further comprising receiving and evaluating signals coming back from the first conductor regarding electrical parameters of said signals.
6. (Canceled)
7. (Currently Amended) A device useful for detecting partial conductor short circuits, comprising:
a retaining device;
a conductor comprising ends and a plurality of mutually insulated partial conductors being short-circuited at least at one end of said conductor, and an auxiliary conductor, arranged in parallel and at a fixed distance to each other in the retaining device;
a signal source;
a measuring device;
an input lead; and
a return lead;
wherein the conductor is connected at one end via the input lead to the signal source; and
wherein the auxiliary conductor is connected via the return lead to the measuring device.
8. (Previously Presented) A device according to claim 7, further comprising a network analyzer, and wherein the signal source and the measuring device are part of the network analyzer.
9. (Previously Presented) A device according to Claim 7, further comprising:

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a signal separating filter for matching the signal amplitudes of the fed-in and received signals between the input lead to the conductor and the return lead from the auxiliary conductor.

10. (Previously Presented) A device according to Claim 7, wherein the auxiliary conductor comprises an insulated copper conductor.
11. (Previously Presented) The method according to claim 1, wherein said conductor comprises a Roebel bar from the stator of an electrical machine.
12. (Previously Presented) The method according to claim 1, wherein the conductor comprises partial conductors which are electrically separated from one another at both ends of said conductor, and further comprising forming a short circuit at at least one of the two ends of said conductor before said measuring.
13. (Previously Presented) A method according to Claim 3, wherein comparing comprises comparing electrical amplitude of the signals returning from the conductor.
14. (Previously Presented) A method according to Claim 3, wherein said periodic signals comprise sinusoidal signals.
15. (Previously Presented) A method according to Claim 4, wherein the frequency is varied in the range of about 100 kHz to about 200 MHz.
16. (Previously Presented) A method according to Claim 5, wherein said predetermined signal form comprises rectangular or triangular signal forms.
17. (Previously Presented) A method in accordance with Claim 5, wherein said electrical parameters comprise signal form.

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18. (Previously Presented) A device according to Claim 7, wherein the conductor comprises a conductor to be measured or a reference conductor.

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